## **CLAIMS:**

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1. A method of treating obesity comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount of a compound having any one of formulae (I) –(VI):

 $TeO_2$  (III)

 $PhTeCl_3$  (IV)

 $(C_6H_5)^{\dagger}P(TeCl_3(O_2C_2H_4))^{-}$  (V)

20  $R_{11}$ — $CH_2$ —O—CH— $R_{12}$  (VI)  $R_{13}$ — $CH_2$ —O—O—CH— $R_{14}$ 

wherein Q is Te or Se; t is 1 or 0; u is 1 or 0; v is 1 or 0; R,  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  are the same or different and are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1 to 5 carbons, hydroxyl, alkyl of from 1 to 5 carbon atoms, halogen, haloalkyl of 1 to 5 carbon atoms, carboxy, alkylcarbonylalkyl of 2 to 10 carbons, alkanoyloxy of 1 to 5 carbon atoms, carboxyalkyl of 1 to 5 carbon atoms, acyl, amido, cyano, amidoalkyl of 1 to 5 carbons, N-monoalkylamidoalkyl of 2 to 10 carbons, N,N-dialkylamidoalkyl of 4 to 10 carbons, cyanoalkyl of 1 to 5 carbons, alkoxy of 1 to 5 carbon atoms, alkoxyalkyl of 2 to 10 carbon atoms and -COR<sub>10</sub>, wherein  $R_{10}$  is alkyl of from 1 to 5 carbons;  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$  and  $R_{14}$  are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1-5 carbons atoms, hydroxyl and alkyl of 1-5 carbons atoms; X is halogen;  $Y^+$  is a pharmaceutically acceptable cation.

- 2. The method of claim 1, wherein Q is Te.
- 3. The method of claim 2, wherein Y<sup>+</sup> is NH<sub>4</sub><sup>+</sup>.
- 4. The method of claim 2, wherein the compound has the formula:

$$\begin{bmatrix} X & O-CH_2 \\ Te & \\ X & O-CH_2 \end{bmatrix}^{-} NH_4^{+}$$

wherein X is halogen.

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- 5. The method of claim 4, wherein the compound is ammonium trichloro(dioxoethylene-O,O')tellurate (AS101).
- 6. The method of claim 1 wherein the individual is a human subject.

- 7. The method of claim 1 wherein the individual is a non-human mammal.
  - 8. The method of claim 1 wherein the pharmaceutical composition is

administered orally, parenterally, transdermally, topically or by contacting mucous membranes.

- 9. The method of claim 8 wherein the pharmaceutical composition is administered orally in a unit dosage form selected from solutions, suspensions, capsules and tablets.
- 10. The method of claim 8 wherein the pharmaceutical composition is administered via a parenteral route selected from intramuscular, intravenous, intradermal and subcutaneous.
- 11. The method of claim 8 wherein the pharmaceutical composition is suitable for sustained or controlled release.
- 12. A method of treating obesity related disorders comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount of a compound having any one of formulae (I) –(VI):

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$$X = \begin{pmatrix} C & R & C & C & R_1 \\ C & C & R_3 & C & C & R_3 \\ C & C & R_5 & C & C & R_5 \end{pmatrix}_{u}$$

$$(R_6 - C - R_7)_{v}$$

$$O - C - R_8$$

$$R_9$$

$$(II)$$

 $TeO_2$  (III)

PhTeCl<sub>3</sub> (IV)

 $(C_6H_5)^{\dagger}P(TeCl_3(O_2C_2H_4))^{-}$  (V)

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 $R_{11}$ — $CH_2$ —O—CH— $R_{12}$  (VI)

wherein Q is Te or Se; t is 1 or 0; u is 1 or 0; v is 1 or 0; R,  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  are the same or different and are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1 to 5 carbons, hydroxyl, alkyl of from 1 to 5 carbon atoms, halogen, haloalkyl of 1 to 5 carbon atoms, carboxy, alkylcarbonylalkyl of 2 to 10 carbons, alkanoyloxy of 1 to 5 carbon atoms, carboxyalkyl of 1 to 5 carbon atoms, acyl, amido, cyano, amidoalkyl of 1 to 5 carbons, N-monoalkylamidoalkyl of 2 to 10 carbons, N,N-dialkylamidoalkyl of 4 to 10 carbons, cyanoalkyl of 1 to 5 carbons, alkoxy of 1 to 5 carbon atoms, alkoxyalkyl of 2 to 10 carbon atoms and -COR<sub>10</sub>, wherein  $R_{10}$  is alkyl of from 1 to 5 carbons;  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$  and  $R_{14}$  are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1-5 carbons atoms, hydroxyl and alkyl of 1-5 carbons atoms; X is halogen; and Y<sup>+</sup> is a pharmaceutically acceptable cation.

- 13. The method of claim 12, wherein Q is Te.
- 14. The method of claim 13, wherein Y is NH<sub>4</sub>.

15. The method of claim 14, wherein the compound has the formula:

$$\begin{bmatrix} X & O-CH_2 \\ Te & \\ X & O-CH_2 \end{bmatrix}^{-} NH_4^{+}$$

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wherein X is halogen.

16. The method of claim 15, wherein the compound is ammonium trichloro(dioxoethylene-O,O')tellurate (AS101).

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17. The method of claim 12 wherein the obesity related disorder is selected from insulin resistance; hypertension; dyslipidemia; hyperlipidemia, cardiovascular disease; stroke; gastrointestinal disease; gastrointestinal conditions; osteoarthritis; sleep apnea and respiratory problems; and eating disorders.

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18. The method of claim 12 wherein the individual is a human subject.

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20. The method of claim 12 wherein the pharmaceutical composition is administered orally, parenterally, transdermally, topically or by contacting mucous membranes.

19. The method of claim 12 wherein the individual is a non-human mammal.

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21. The method of claim 20 wherein the pharmaceutical composition is administered orally in unit dosage forms selected from solutions, suspensions, capsules and tablets.

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22. The method of claim 20 wherein the pharmaceutical composition is administered via a parenteral route selected from intramuscular, intravenous, intradermal and subcutaneous.

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23. The method of claim 20 wherein the pharmaceutical composition is suitable for sustained or controlled release.

24. A method of reducing food intake comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount of a compound having any one of formulae (I) –(VI):

5  $\begin{bmatrix}
R \\
O - C - R_1 \\
X \\
(R_2 - C - R_3)_t \\
X - Q \\
(R_4 - C - R_5)_u \\
(R_6 - C - R_7)_v
\end{bmatrix}$ (I)

10  $X = \begin{pmatrix} C & R_1 & (II) \\ (R_2 - C - R_3)_t & (R_4 - C - R_5)_u \\ (R_6 - C - R_7)_v & (R_6 - C - R_8)_v \end{pmatrix}$ 

TeO<sub>2</sub> (III)

PhTeCl<sub>3</sub> (IV)

 $(C_6H_5)^{+}P(TeCl_3(O_2C_2H_4))^{-}$  (V)

 $R_{11}$ — $CH_2$ —O O—CH— $R_{12}$  (VI)  $R_{13}$ — $CH_2$ —O O—CH— $R_{14}$ 

wherein Q is Te or Se; t is 1 or 0; u is 1 or 0; v is 1 or 0; R, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are the same or different and are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1 to 5 carbons, hydroxyl, alkyl of from 1 to 5 carbon atoms, halogen, haloalkyl of 1 to 5 carbon atoms, carboxy, alkylcarbonylalkyl of 2 to 10 carbons, alkanoyloxy of 1 to 5 carbon atoms, carboxyalkyl of 1 to 5 carbon atoms, acyl, amido, cyano, amidoalkyl of 1 to 5 carbons, N-monoalkylamidoalkyl of 2 to 10 carbons, N,N-dialkylamidoalkyl of 4 to 10 carbons, cyanoalkyl of 1 to 5 carbons, alkoxy of 1 to 5 carbon atoms, alkoxyalkyl of 2 to 10 carbon atoms and -COR<sub>10</sub>, wherein R<sub>10</sub> is alkyl of from 1 to 5 carbons; R<sub>11</sub>, R<sub>12</sub>, R<sub>13</sub> and R<sub>14</sub> are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1-5 carbons atoms, hydroxyl and alkyl of 1-5 carbons atoms; X is halogen; and Y<sup>+</sup> is a pharmaceutically acceptable cation.

- 25. The method of claim 24, wherein Q is Te.
- 26. The method of claim 25, wherein Y<sup>+</sup> is NH<sub>4</sub><sup>+</sup>.
  - 27. The method of claim 26, wherein the compound has the formula:

$$\begin{bmatrix} X & O-CH_2 \\ Te & \\ X & O-CH_2 \end{bmatrix}^{-} NH_4^{+}$$

wherein X is halogen.

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- 28. The method of claim 27, wherein the compound is ammonium trichloro(dioxoethylene-O,O')tellurate (AS101).
- 29. The method of claim 24 wherein the individual is a human subject.
- 25 30. The method of claim 24 wherein the individual is a non-human mammal.
  - 31. The method of claim 24 wherein the pharmaceutical composition is

administered orally, parenterally, transdermally, topically or by contacting mucous membranes.

- 32. The method of claim 31 wherein the pharmaceutical composition is administered orally in unit dosage forms selected from solutions, suspensions, capsules and tablets.
- 33. The method of claim 31 wherein the pharmaceutical composition is administered via a parenteral route selected from intramuscular, intravenous, intradermal and subcutaneous.
- 34. The method of claim 31 wherein the pharmaceutical composition is suitable for sustained or controlled release.
- 35. A method of alleviating a disease or disorder by reduction of food intake comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount of a compound having any one of formulae (I) –(VI):

$$\begin{bmatrix} R & & & & \\ & & & & \\ X & & & & \\ X - C - R_3)_t & & & \\ X - Q & & & & \\ (R_4 - C - R_5)_u & & & \\ (R_6 - C - R_7)_v & & \\ & & & & \\ X & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

$$\begin{array}{c}
R \\
O - C - R_1 \\
(R_2 - C - R_3)_t \\
(R_4 - C - R_5)_u \\
(R_6 - C - R_7)_v \\
O - C - R_8 \\
R_9
\end{array} \tag{II}$$

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$$TeO_2$$
 (III)

$$(C_6H_5)^{\dagger}P(TeCl_3(O_2C_2H_4))^{-}$$
 (V)

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$$R_{11}$$
— $CH_2$ — $O$ — $CH$ — $R_{12}$  (VI)  
 $R_{13}$ — $CH_2$ — $O$ — $O$ — $CH$ — $R_{14}$ 

wherein Q is Te or Se; t is 1 or 0; u is 1 or 0; v is 1 or 0; R, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are the same or different and are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1 to 5 carbons, hydroxyl, alkyl of from 1 to 5 carbon atoms, halogen, haloalkyl of 1 to 5 carbon atoms, carboxy, alkylcarbonylalkyl of 2 to 10 carbons, alkanoyloxy of 1 to 5 carbon atoms, carboxyalkyl of 1 to 5 carbon atoms, acyl, amido, cyano, amidoalkyl of 1 to 5 carbons, N-monoalkylamidoalkyl of 2 to 10 carbons, N,N-dialkylamidoalkyl of 4 to 10 carbons, cyanoalkyl of 1 to 5 carbons, alkoxy of 1 to 5 carbon atoms, alkoxyalkyl of 2 to 10 carbon atoms and -COR<sub>10</sub>, wherein R<sub>10</sub> is alkyl of from 1 to 5 carbons; ; R<sub>11</sub>, R<sub>12</sub>, R<sub>13</sub> and R<sub>14</sub> are independently selected from the group consisting of hydrogen, hydroxyalkyl of 1-5 carbons atoms, hydroxyl and alkyl of 1-5 carbons atoms; X is halogen and Y<sup>+</sup> is a pharmaceutically acceptable cation.

- 36. The method of claim 35, wherein Q is Te.
- 37. The method of claim 36, wherein Y<sup>+</sup> is NH<sub>4</sub><sup>+</sup>.

38. The method of claim 37, wherein the compound has the formula:

$$\begin{bmatrix} X & O-CH_2 \\ Te & \\ X & O-CH_2 \end{bmatrix}^{-} NH_4^{+}$$

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wherein X is halogen.

mucous membranes.

39. The method of claim 38, wherein the compound is ammonium trichloro(dioxoethylene-O,O')tellurate (AS101).

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40. The method of claim 35 wherein the disorder or disease is selected from insulin resistance; hypertension; dyslipidemia; hyperlipidemia; cardiovascular disease; stroke; gastrointestinal disease; gastrointestinal conditions; osteoarthritis; sleep apnea and respiratory problems; and eating disorders.

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41. The method of claim 35 wherein the individual is a human subject.

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43. The method of claim 35 wherein the pharmaceutical composition is administered orally, parenterally, transdermally, topically or by contacting

42. The method of claim 35 wherein the individual is a non-human mammal.

44. The method of claim 43 wherein the pharmaceutical composition is administered orally in unit dosage forms selected from solutions, suspensions, capsules and tablets.

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45. The method of claim 43 wherein the pharmaceutical composition is administered via a parenteral route selected from intramuscular, intravenous, intradermal and subcutaneous.

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46. The method of claim 43 wherein the pharmaceutical composition is suitable for sustained or controlled release.